

## REMARKS

Applicant and his attorney would like to thank the Examiner for taking the time to participate in the interview conducted on August 2, 2006.

The present amendment is in response to the Office Action dated July 7, 2006, wherein the Examiner has rejected claims 1-8 and 26-58. By the present amendment claims 2 and 27-32 have been amended, claim 59 has been added and none of the claims have been canceled. Accordingly, claims 1-8 and 26-59 are pending in the present application. Reconsideration and allowance of pending claims 1-8 and 26-59 in view of the amendments and the following remarks are respectfully requested.

### **Claim Rejections Under §112:**

Paragraph 1 of the Action rejects claims 27-32 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, based on the inclusion of the term “the shaft module,” which has no antecedent basis. Applicant has replaced the above term with the correct term “swing data collection system,” which is used in claim 26 to refer to the shaft module described in the application. Accordingly, Applicant respectfully requests withdrawal of the rejection.

### **Claim Rejections Under §103:**

Paragraph 3 of the Office Action rejects claims 1, 6-7, 45, and 48-52 under 35 U.S.C. 103(a) as being obvious in view of Anderson (U.S. Pub. 2003/0008731) in further view of Gobush (U.S. 6,758,759). Applicants respectfully traverse the rejection because Anderson and

Gobush, alone or in combination, fail to teach, suggest, or disclose all elements of the claims for at least the reasons described below.

Certain embodiments of the present application are directed to methods for fitting a golfer with golf equipment that is particularly suited to the golfer's swing and that has been optimized to achieve the best results for the golfer. As noted in the background of the present application, there are many conventional methods for fitting a golfer with golf equipment, such as those cited in the Action, that rely on measurements of certain swing parameters to determine the best equipment. As noted, however, such a process often produces poor results. The present application, on the other hand, goes beyond such conventional techniques by providing a system that allows the shaft, club head, and/or golf ball to be replaced to optimize certain swing parameters such as launch angle, velocity and/or spin rate. Once the swing parameters are optimized, then golf equipment can be specified in order to achieve a better fitting. (See, e.g., figure 3 and the accompanying description).

Importantly, the ability to replace the shaft separate from the club head and vis versa is key to a successful fitting. There are many parameters that effect the golf swing, and even the smallest of changes can have a big effect. Accordingly, the systems and methods described in the present application allow for many small variations by providing a quick and efficient means to change parameters such as shaft torque, tip stiffness, butt stiffness, overall stiffness, weight, grip, grip weight, etc., and club head center of gravity, loft, etc.

As described in paragraph 54 on page 13, optimization of the launch angle, velocity, and spin rate can comprise matching a determined ball speed with an appropriate combination of launch angle and spin rate. In other words, the present application teaches that once the ball

speed has been determined, a combination of launch angle and spin rate can be obtained that will, e.g., provide the maximum distance. Accordingly, once optimized combination of launch angle and spin rate are obtained, the shaft, club head, and/or ball can be changed in order to realize the optimum combination of launch angle and spin rate.

It should be noted that based on physics, the optimum launch angle for maximum distance would always be something close to 45 degrees; however, other factors such as wind also have an effect. Accordingly, as taught in the present application (see para. 59, page 15), a maximum ceiling height can be specified for the ball flight. The optimized combination of launch angle and spin rate for a certain ball speed can then be determined taking into account the maximum ceiling height.

Contrary to the position taken in the Action, neither Anderson or Gobush, alone or in combination teach suggest or disclose such an approach. Anderson is directed to a system in which a Golfer's swing can be analyzed in order to select a golf club that best fits his swing. In this respect, Anderson teaches obtaining swing information for a golfer using markers on the golfer and the club. Movement of the markers is then captured by a camera. (See, e.g., paragraphs 30, 35, and 44). In certain embodiments, additional sensors such as strain gauges and a launch monitor can be included in order to capture additional data. The data captured is then used to specify golf equipment.

Anderson does not teach replacing one of the shaft and the club head, nor does it teach optimizing the launch angle, velocity, and/or spin rate relative to each other, prior to specifying golf equipment as taught in the present application. Similarly, Gobush teaches gathering certain parameters related to the swing and the results it produces. Gobush does not, however, teach

replacing one of the shaft and the club head, nor does it teach optimizing the launch angle, velocity, and/or spin rate relative to each other as described above and as taught in the present application. In other words, neither reference teaches determining a ball speed and then obtaining an optimized combination of launch angle and spin based on the ball speed.

Claim 1 includes limitations that embody the features described above. Accordingly, Anderson and Gobush, alone or in combination cannot render claim 1 unpatentable. Applicant therefore respectfully requests withdrawal of the rejection as to claim 1 and as to claims 6-7, 45, and 48-52, which ultimately depend from claim 1.

Paragraph 4 of the Office Action rejects claims 2-5, 8, and 46 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush and in further view of Hammond and Naruo. Applicant respectfully traverses the rejection because claims 2-5, 8, and 46 ultimately depend from claim 1, and are therefore patentable for at least the same reason as discussed above unless Hammond and Naruo make up for the deficiencies of Anderson and Gobush, which they do not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claims 2-5, 8, and 46.

Paragraph 5 of the Office Action rejects claim 41 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush and in further view of Nauck. Applicant respectfully traverses the rejection because claim 41 ultimately depends from claim 1, and is therefore patentable for at least the same reason as discussed above unless Nauck makes up for the deficiencies of Anderson and Gobush, which it does not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 41.

Paragraph 6 of the Office Action rejects claim 42 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush and in further view of Sayers. Applicant respectfully traverses the rejection because claim 42 ultimately depends from claim 1, and is therefore patentable for at least the same reason as discussed above unless Sayers makes up for the deficiencies of Anderson and Gobush, which it does not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 42.

Paragraph 7 of the Office Action rejects claim 43 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush and in further view of Antonious (U.S. Patent No. 5,916,041). Applicant respectfully traverses the rejection because claim 43 ultimately depends from claim 1, and is therefore patentable for at least the same reason as discussed above unless Antonious makes up for the deficiencies of Anderson and Gobush, which it does not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 43.

Paragraph 8 of the Office Action rejects claim 44 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush and in further view of Mann. Applicant respectfully traverses the rejection because claim 44 ultimately depends from claim 1, and is therefore patentable for at least the same reason as discussed above unless Mann makes up for the deficiencies of Anderson and Gobush, which it does not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 44.

Paragraph 9 of the Office Action rejects claim 47 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush and in further view of Cervantes. Applicant respectfully traverses the rejection because claim 47 ultimately depends from claim 1, and is therefore patentable for at least the same reason as discussed above unless Cervantes

makes up for the deficiencies of Anderson and Gobush, which it does not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 47.

Paragraph 10 of the Office Action rejects claims 26-32, 35, 37-38, 40, and 53-58 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush, Hammond, and Naruo in further view of Karasavas (U.S. 5,133,556). Applicants respectfully traverse the rejection because Anderson, Gobush, Hammond, Naruo, and Karasavas, alone or in combination, fail to teach, suggest, or disclose all elements of the claims for at least the reasons described below.

Certain embodiments of the present invention are directed to systems and methods for fitting golf equipment, including marking a golf ball with at least two colors and using a high speed color camera to obtain images of the golf ball after impact by the golf club. The images can then be used to obtain launch data, such as spin rate and direction. By using color high-speed cameras and a golf ball with at least two color markings more accurate and more reliable launch data can be obtained as compared to conventional systems that typically use black and white high speed cameras. (See paragraph 072). Further, by using color markers less data is needed relative to the system of Gobush because fewer markers can be used in the present system. For example, using color markers eliminates the need for a complicated calibration process and need to align the golf ball precisely for each swing.

Accordingly, claim 26 recites a golf equipment fitting system, comprising “a launch data collection system, comprising a *high speed color camera system* configured to obtain information related to launch of a golf ball based on color markings on the golf ball, the color markings comprising *at least two colors*.”

Contrary to the position taken in the Action, none of the cited references alone or in combination teach suggest or disclose these limitations. First, Anderson does not disclose using markers on the ball. Paragraph 36 discusses “markerless” tracking of “natural features” of the golf club, golfer and/or golf ball. Accordingly, paragraph 36 teaches the opposite of having markers on the golf ball. Nor does Anderson discuss the use of a high speed color camera system.

Gobush, teaches using only *one* color for any given golf ball stating that when using colored markers, the club cameras can include filters of a different color from filters on the ball camera so that the club camera records images of the markers on the club and the ball and the ball camera records only images of markers on the ball. (See Gobush, col. 19, lns. 37-50). In other words, the use of color in Gobush is for a different purpose, i.e., making sure that the system does not confuse the marking on the club for the markings on the golf ball. This is achieved by using a certain color on the golf ball, and a certain color on the golf club, and then using a filter that filter out the color used on the golf club but does not filter the color used on the golf ball. Thus, in Gobush, only a single color is used on the ball and a single color is used on the club. Further, the two examples cited in Gobush are both monochrome cameras and not color cameras. (See col. 4, line 33 and col. 5, lines 21-22). The definition of monochrome is “[a] black-and-white image, as in photography or on television.” (See Dictionary.com). As one of skill in the art will understand, the only reason Gobush uses color markings is to create a variation between the markers and the ball that can be picked up by the black and white camera being used.

Karasavas teaches putting markings on the golf ball for use in aligning the golfers eyes and body over the golf ball. Different colored lines are used in order to allow different clubs, e.g., a 3 iron versus a wedge, to be aligned with the ball appropriately. (See col. 5, lines 22-34). Accordingly, Karasavas has nothing to do with club fitting or the use of a color launch monitor.

Accordingly, claim 26 is allowable over the art of record, because neither Anderson, Gobush, Karasavas, Hammond, or Naruo, alone or in combination teach the use of a color launch monitor and color markings comprising at least two colors.

Further, even if these limitations were present as alleged, which they are not, the rejection would still be improper since there is no motivation contained in the references themselves to combine, or modify the teachings of the references to achieve the invention as claimed in claim 26. First, Anderson teaches away from having any markings on the golf ball. Therefore, one of skill in the art would not be motivated to modify the teachings of Anderson to use color for markers that do not exist. Second, Gobush teaches away from having a color launch monitor and expressly uses a monochrome launch monitor instead. Accordingly, one of skill in the art would not be motivated to modify the teachings of Anderson to include a color launch monitor based on the teachings of Gobush, because Gobush does not teach the use of a color launch monitor. Finally, it is highly unlikely that one of skill in the art would have relied on Karasavas to modify the teachings of Gobush, since Karasavas has nothing to do with monitoring swing parameters and specifying golf equipment using a launch monitor. Further, Karasavas teaches using markings for an entirely different purpose than those taught in Gobush. But in any event, using multiple colors with the system taught in Gobush would be pointless, since Gobush is a



monochrome system. At best, the rejection appears to be based on impermissible hindsight gleaned from the teachings of the present application.

Applicants therefore respectfully request withdrawal of the rejection as to claims 26 and claims 27-32, 35, 37-38, 40, and 53-58, which ultimately depend from claim 26.

Paragraph 11 of the Office Action rejects claims 33-34 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush, Hammond, Naruo, and Karasavas and in further view of Kawaguchi. Applicant respectfully traverses the rejection because claims 33-34 ultimately depend from claim 26, and are therefore patentable for at least the same reason as discussed above unless Kawaguchi makes up for the deficiencies of Anderson, Gobush, Hammond, Naruo, and Karasavas, which it does not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claims 33-34.

Paragraph 12 of the Office Action rejects claims 36 and 39 under 35 U.S.C. 103(a) as being obvious in view of Anderson in further view of Gobush, Hammond, Naruo, and Karasavas and in further view of Evans. Applicant respectfully traverses the rejection because claims 36 and 39 ultimately depend from claim 26, and are therefore patentable for at least the same reason as discussed above unless Evans makes up for the deficiencies of Anderson, Gobush, Hammond, Naruo, and Karasavas, which it does not. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claims 36 and 39.

**New Claims**

New claim 59 was added in the above amendments. Applicant believes that no new matter is introduced by the addition of new claim 59, and that new claim 59 is fully supported by the specification and is allowable over the art of record for the reasons stated above.

**CONCLUSION**

Applicant believes that given the above amendments and remarks, the claims are now in condition for allowance and such is respectfully requested. The Commissioner is hereby authorized to charge the fees for the new claim and any additional fees or credit any over payments due with this response to deposit account 13-0480 referencing attorney docket number 67175523-001105.

Respectfully submitted,

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